

CLAIMS

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2
3 1. A method, including steps of
4 encoding a media stream into a digital content format representing that
5 media stream; and
6 encrypting a portion of that digital content, less than the entire digital
7 content format representing that media stream, the portion of the digital content that is
8 encrypted being required for presentation of the media stream;
9 wherein the encrypted version of that digital content is substantially un-
10 changed in formatting parameters from an unencrypted version of that digital content.

11
12 2. A method as in claim 1, wherein
13 said steps of encoding provide an MPEG encoding of at least some video
14 data.

15
16 3. A method as in claim 1, wherein
17 said steps of encrypting include steps of
18 encrypting at least some audio or video data using a block-substitution ci-
19 pher.

20
21 4. A method as in claim 1, wherein
22 said steps of encrypting include steps of

1 encrypting at least some audio or video data using a block-substitution ci-
2 pher; and

3 refraining from encrypting at least some audio or video data using that
4 block-substitution cipher, wherein an amount of audio or video data not encrypted is
5 less than a block size for that block-substitution cipher.

6
7 5. A method as in claim 1, wherein
8 said steps of encrypting include steps of
9 identifying at least a first set of data and a second set of data in the digital
10 format; and

11 separately encrypting the first set of data and the second set of data;
12 whereby the first set of data can be made available to a first set of users
13 and the second set of data can be made available to a second set of users, the first set of
14 users being distinguishable from the second set of users.

15
16 6. A method as in claim 1, wherein
17 said steps of encrypting include steps of
18 refraining from encrypting at least one of (a) information by which at least
19 some audio or video data is described, or (b) at least some formatting information.

20
21 7. A method as in claim 1, wherein
22 the digital content format includes

1 at least some audio or video data; and
2 at least some formatting information.

3
4 8. A method as in claim 1, wherein

5 the digital content format representing that media stream includes a set of
6 layers, each relatively higher-level layer representing an abstraction for which each
7 relatively lower-level layer represents an implementation thereof;

8 a first set of relatively higher-level layers represent audio or video infor-
9 mation for the media stream, while a second set of relatively lower-level layers repre-
10 sent techniques by which that information is formatted or supplemented; and

11 the step of encrypting is applied only to that portion of the digital content
12 representing audio and video information.

13
14 9. A method as in claim 1, wherein

15 the digital content format representing that media stream includes a set of
16 layers, each relatively higher-level layer representing an abstraction for which each
17 relatively lower-level layer represents an implementation thereof;

18 a first set of relatively higher-level layers represent audio or video infor-
19 mation for the media stream, while a second set of relatively lower-level layers repre-
20 sent techniques by which that information is broken into packets, indexed, multiplexed,
21 or supplemented with metadata; and

1 the step of encrypting is applied only to that portion of the digital content
2 representing audio and video information.

3
4 10. A method as in claim 1, wherein
5 the digital content format representing that media stream includes a set of
6 layers, each relatively higher-level layer representing an abstraction for which each
7 relatively lower-level layer represents an implementation thereof;

8 a first set of relatively higher-level layers represent audio and video in-
9 formation for the media stream, while a second set of relatively lower-level layers rep-
10 resent techniques by which that information is broken into packets, indexed, multi-
11 plexed, or supplemented with metadata; and

12 the step of encrypting is not applied to at least part of that portion of the
13 digital content representing other than audio and video information.

14
15 11. A method as in claim 1, wherein
16 the media stream includes at least one of: a movie, animation, sound, still
17 media, a picture, an illustration, a database, a collection of information.

18
19 12. A method as in claim 1, including steps of
20 selecting that portion of the digital content for encryption so there is no
21 substantial change in distribution of that digital content.

1 13. A method as in claim 12, wherein

2 said steps of selecting include ensuring there is no substantial change in
3 packetization of a set of digital data in that digital content.

4
5 14. A method as in claim 12, wherein

6 said steps of selecting include ensuring there is no substantial change in
7 synchronization of audio with video portions of the media stream.

8
9 15. A method as in claim 12, wherein

10 said steps of selecting include ensuring there is no substantial change in
11 length of at least some identifiable audio or video data in that digital content.

12
13 16. Apparatus including

14 an input port capable of being coupled to a communication link, the
15 communication link being capable of carrying digital content, the digital content in-
16 cluding at least some presentable information and at least some formatting information;

17 a digital content decoder, the decoder being capable of identifying the
18 presentable information in response to the formatting information;

19 a digital content decryptor, the decryptor being capable of decrypting the
20 presentable information in response to a key;

21 wherein the decryptor is protected by a relatively-higher degree of secu-
22 rity than the decoder.

1
2 17. Apparatus as in claim 16, wherein the communication link includes
3 at least one of:

4 a computer network capable of carrying digital content;
5 a reader capable of retrieving information in response to physical media,
6 the physical media being capable of carrying digital content.

7
8 18. Apparatus as in claim 16, wherein the decoder includes an MPEG
9 decoder.

10
11 19. Apparatus as in claim 16, wherein
12 the decoder is included in a first selected set of hardware or software, the
13 first selected set being trusted; and
14 the decryptor and the key are included in a second selected set of hard-
15 ware or software, the second selected set being relatively more trusted than the first se-
16 lected set.

17
18 20. Apparatus as in claim 16, wherein the decoder is responsive to the
19 formatting information to present at least some metadata about one or more media
20 streams without the decoder having access to the presentation information.

1 21. Apparatus as in claim 16, wherein the decoder is responsive to the
2 formatting information to provide at least one of the following functions without the
3 decoder having access to the presentation information:

4 known playback functions known for media streams;

5 navigation within the digital content;

6 content selection within the digital content; or

7 manipulation of the presentation.

8
9 22. Apparatus as in claim 16, wherein the digital content represents a
10 media stream including at least one of: a movie, animation, sound, still media, a picture,
11 an illustration, a database, a collection of information.

12
13 23. Apparatus as in claim 16, wherein the relatively-higher degree of
14 security includes tamper-resistant hardware operating under control of verified soft-
15 ware.

16
17 24. Apparatus as in claim 16, wherein
18 the digital content represents a first media stream and a second media
19 stream,

20 the decoder being responsive to the formatting information and the de-
21 cryptor being responsive to a selected key,

1 the selected key providing differential access to selected users to the first
2 media stream and the second media stream.

3
4 25. Apparatus as in claim 24, wherein
5 the first media stream includes audio information and the second media
6 stream includes video information;

7 the first media stream includes information in a first language and the
8 second media stream includes information in a second language;

9 the first media stream includes presentation information targeted at a first
10 type of audience and the second media stream includes information targeted at a first
11 type of audience.

12
13 26. A method, including steps of
14 encoding a media stream into a digital content format representing that
15 media stream, that digital content format having a set of information nodes, those in-
16 formation nodes being disposed in at least a partial ordering;
17 encrypting a portion of that digital content, the portion being encrypted
18 less than the entire digital content format representing that media stream, the portion of
19 the digital content that is encrypted being required for presentation of the media
20 stream;

1 wherein the unencrypted portion of that digital content is substantially
2 closed in a direction under that partial ordering, whereby it is possible to decode the
3 unencrypted portion of that digital content without having to decrypt it.